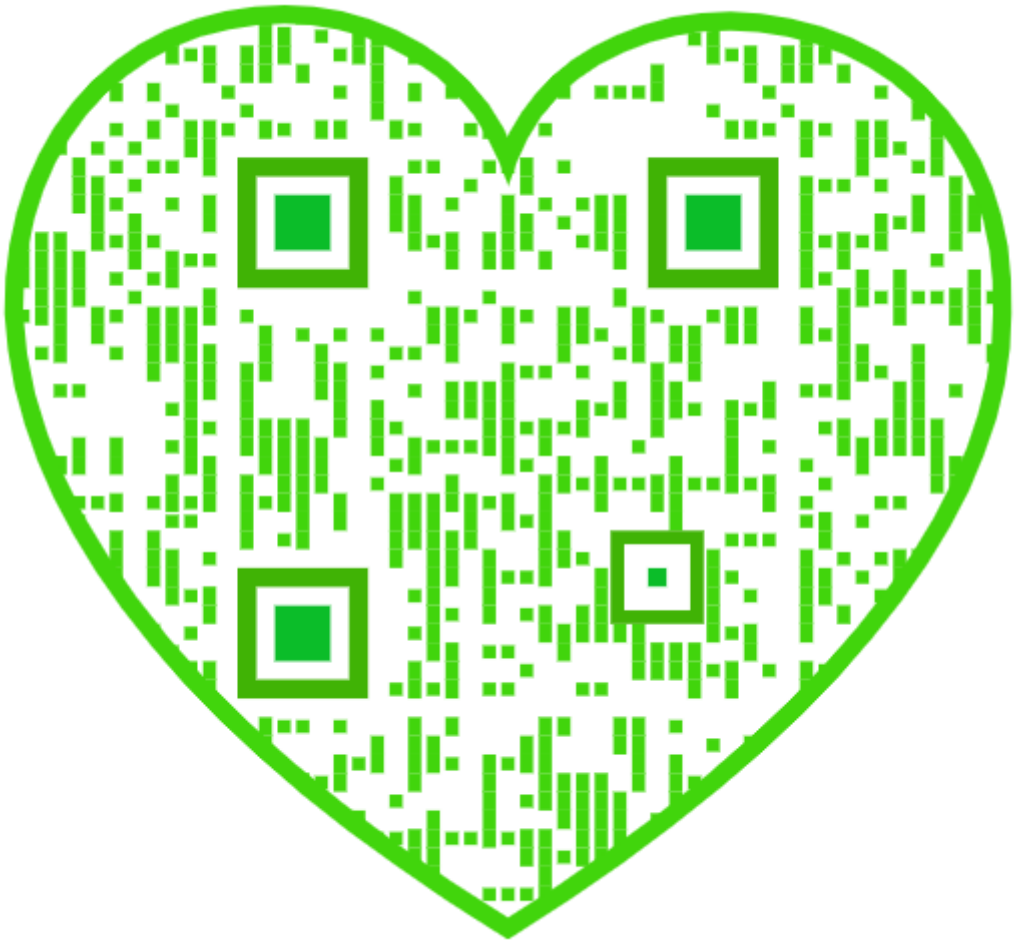

THE GILBERT SYSTEM

OF

ORCHARD PLANTING

BY

RALPH D. GILBERT

Univ. of California

BOSTON
1913

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The Gilbert System of Orchard Planting

BY

Ralph D. Gilbert

The advantages of this system of planting are that it allows the land to be more fully occupied all the time than when the trees are planted in squares, and that the thinning may be done as needed, without spoiling the final symmetry of the orchard. On the scale shown the original trees are planted so that each is 20 feet distant from six others, thus forming a hexagon and in the mature orchard each tree will be 40 feet distant from six others. In square planting forty feet apart there are 27 trees to the acre while in hexagonal planting there are 33 trees. If the six additional trees produce three barrels of apples each it adds 18 barrels to the acre which at $3.00 per barrel means an increase of $54.00 per acre per year; an item worth considering. It makes provision for cross pollenization of two varieties, which is very important, and is so arranged that the number of trees in the permanent orchard may be equally divided between two varieties, or if one variety proves to be much more profitable than the other, the trees of that variety may predominate. No man can say today, which variety would be the most profitable to grow in 1930, and planted in this way, you have an option on varieties until about 20 years after the orchard is planted. The "fillers" may cost 30c. each and 20c. to set them, but in 8 years they have paid for themselves, and the following 8 years they should be very profitable.

A setting board like the one shown on the following page from bulletin #141, of the Vermont Agricultural Experiment Station will be found convenient to use to make sure that the tree when set, shall stand in exactly the place indicated by the stake before the hole was dug.

In staking out the orchard, the stakes for a certain number of units should be stained or painted to correspond with colors on circles of diagram to insure against confusion and misplacing of varieties when setting the trees. It is also advisable to set all the trees of one variety in a given area before bringing the other varieties into the field, planting varieties indicated by red and blue circles before planting green.

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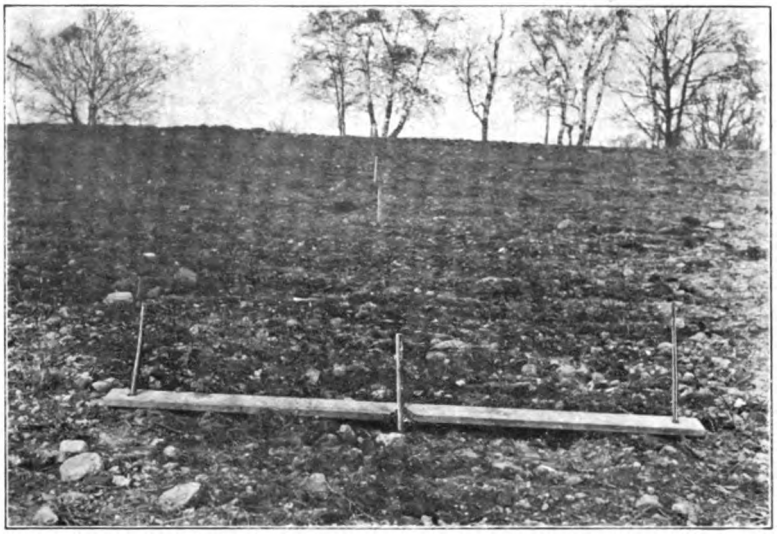
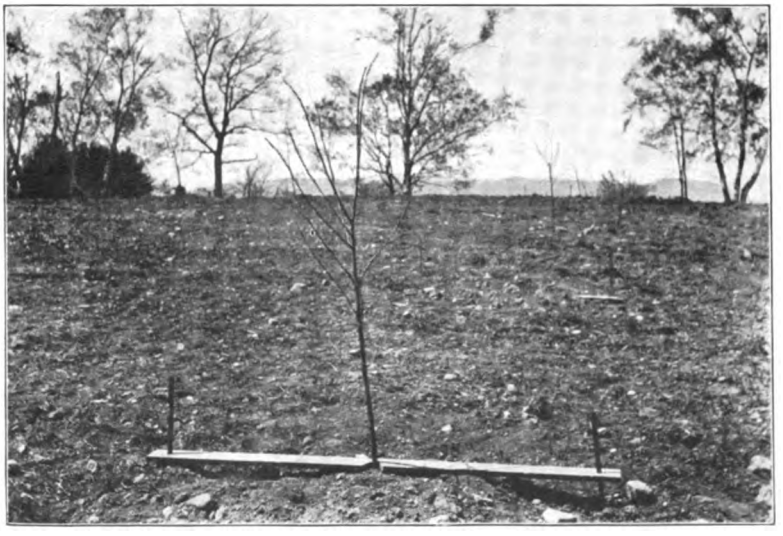


LOCATING PLANTING BOARD STAKES



LOCATING TREE BY PLANTING BOARD

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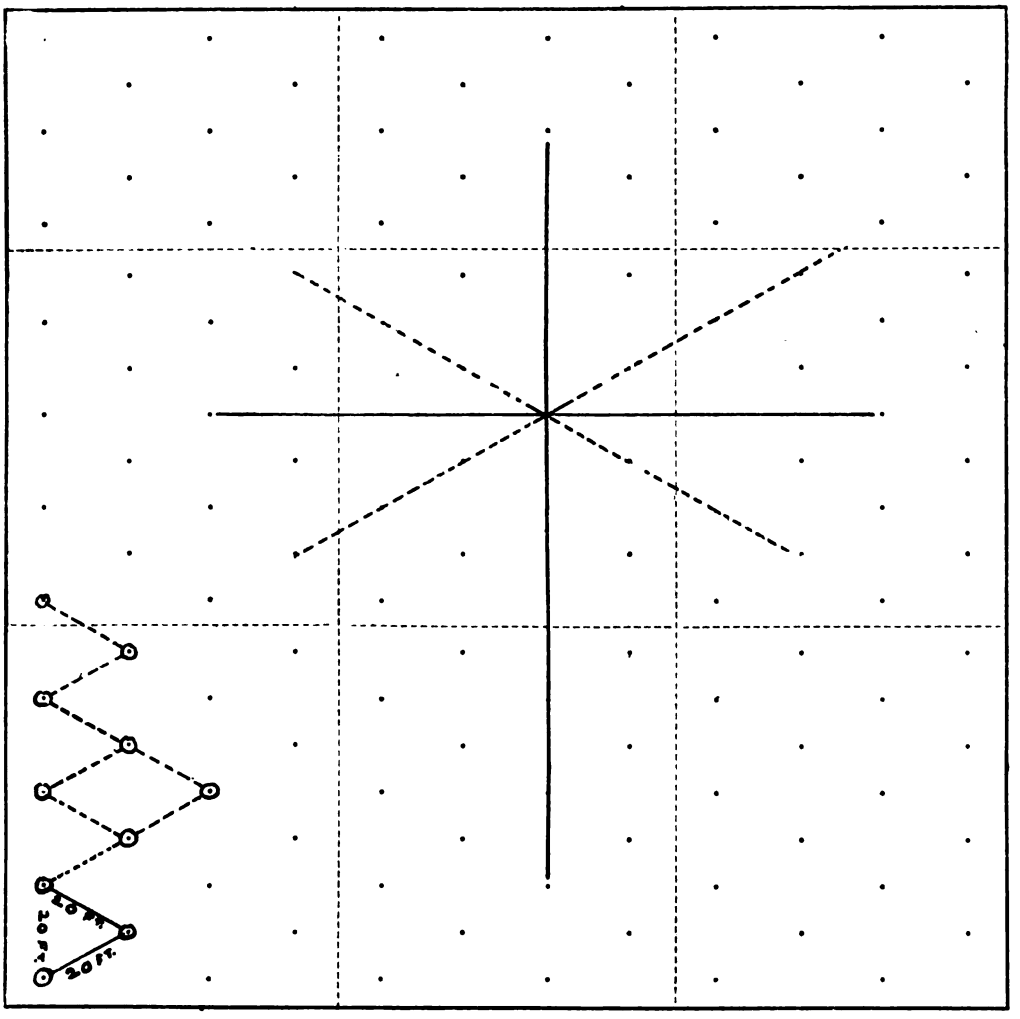
DESCRIPTION OF ILLUSTRATIONS.

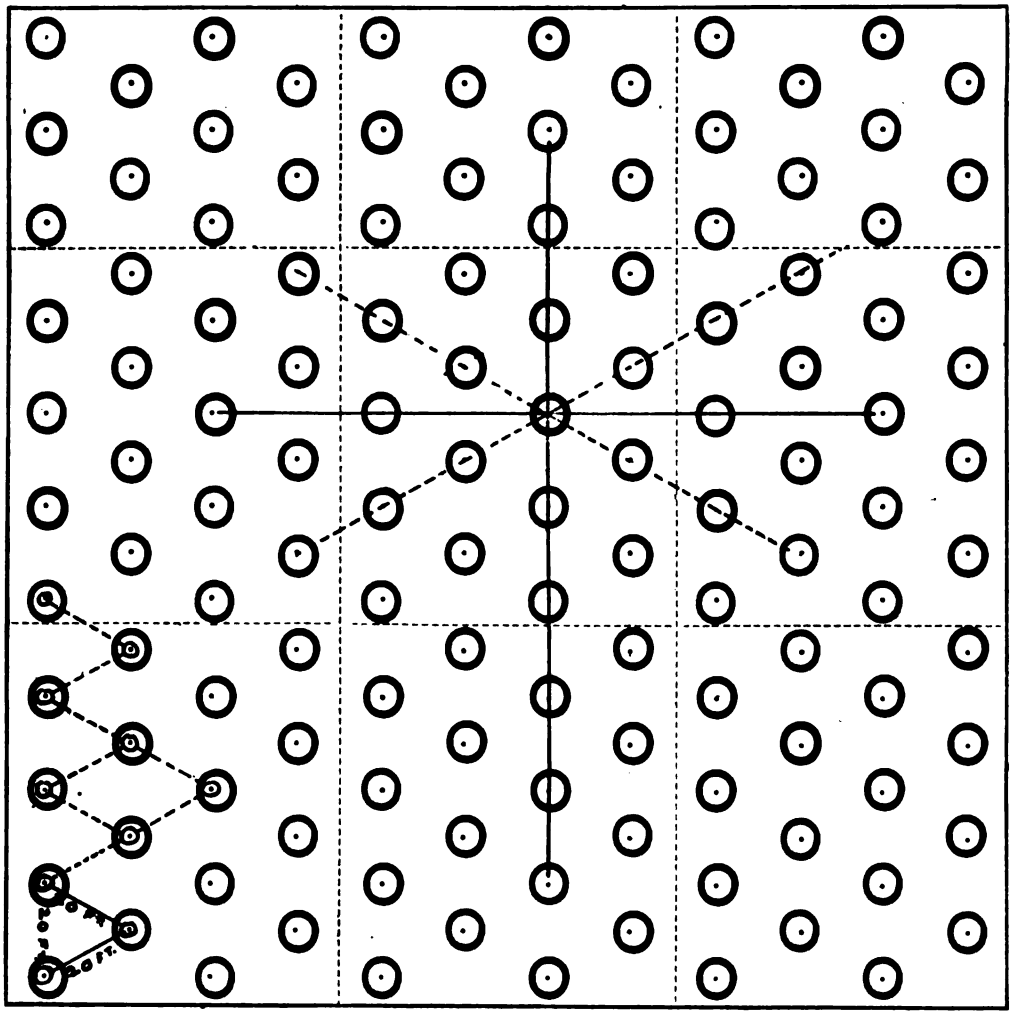
The planting board is used to insure planting the trees in exactly the place where the stakes stood when laying out the orchard. The notch should be cut half across the board and in line with the end holes and exactly half way between them. After staking out the field place the planting board against the stakes as shown in the upper cut and drive two stakes of the same color through the end holes. The board and center stake may now be removed and the hole dug or dynamited. After the hole is ready to receive the tree, slip the planting board back in place and by holding the tree in the center notch where the original stake first stood you will get the tree located exactly right. Instead of having holes in the ends of the board and cutting all marking stakes to a small diameter it is often more convenient to cut a notch in each end of the board and drive the marking stakes in the notches but in that case be sure that the notches come exactly in the center of the board and not nearer to one edge than the other.

DIAGRAM SHOWING LOCATION OF STAKES
AND METHOD OF STAKING.



To stake out a field for planting, lay out a row, being very careful to have it straight and exactly at right angles with one side of the field. Drive small stakes along this row, one every twenty (20) feet. Three men with a wire or chain forty (40) feet long with a ring on either end and a ring in the middle can then lay out the next row very easily by the end men holding their rings on stakes in the first row, the third man simply pulling both chains tight and driving his stake. Repeat this operation for all the rest of the rows. ***If the land is uneven, care should be taken to hold the chains level.*** Occasional "sighting" may be necessary to keep the rows exactly straight in every direction. The lines in the lower left hand corner illustrate how the field may be staked out. The straight lines in the center of the diagram show how to sight the trees to get the rows straight in every direction. It pays to spend time to have all the rows of trees straight in every direction not only because they look better but they are much easier to cultivate.

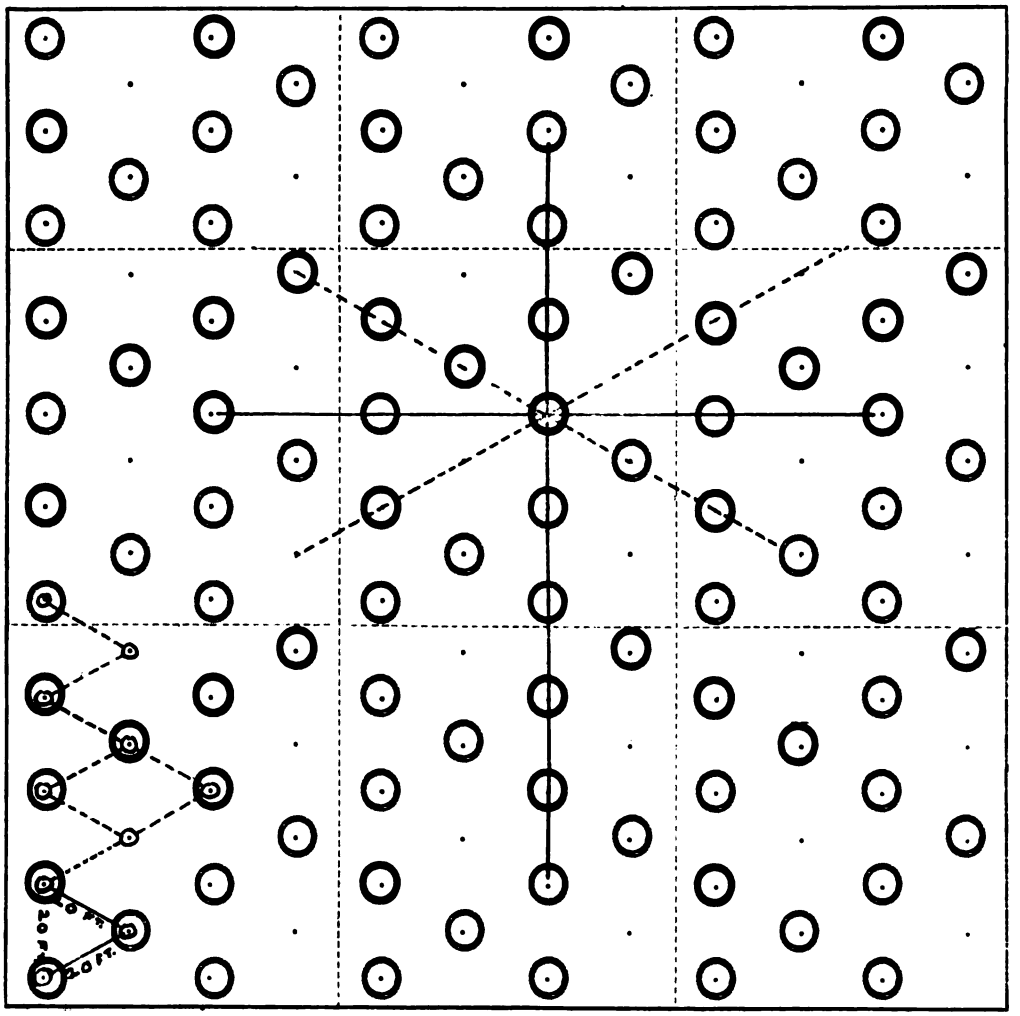
COMPLETE ORCHARD AS FIRST PLANTED.



The outline represents a square acre. Dashed lines represent boundaries of units. This plan is drawn to scale so that every tree is twenty (20) feet distant from six other trees set on the corners of a hexagon. Each unit contains six (6) blue and six (6) red and four (4) green. The acre contains one hundred and twenty-six (126) trees.

Let the blue represent Baldwins, the red McIntosh and the green some early maturing variety, like the Wealthy; or the poorest trees of both Baldwin and McIntosh may be set in the green circles as these are removed in the first thinning, so have no permanent place in the orchard.

ORCHARD AFTER FIRST THINNING
15 TO 18 YEARS FROM PLANTING

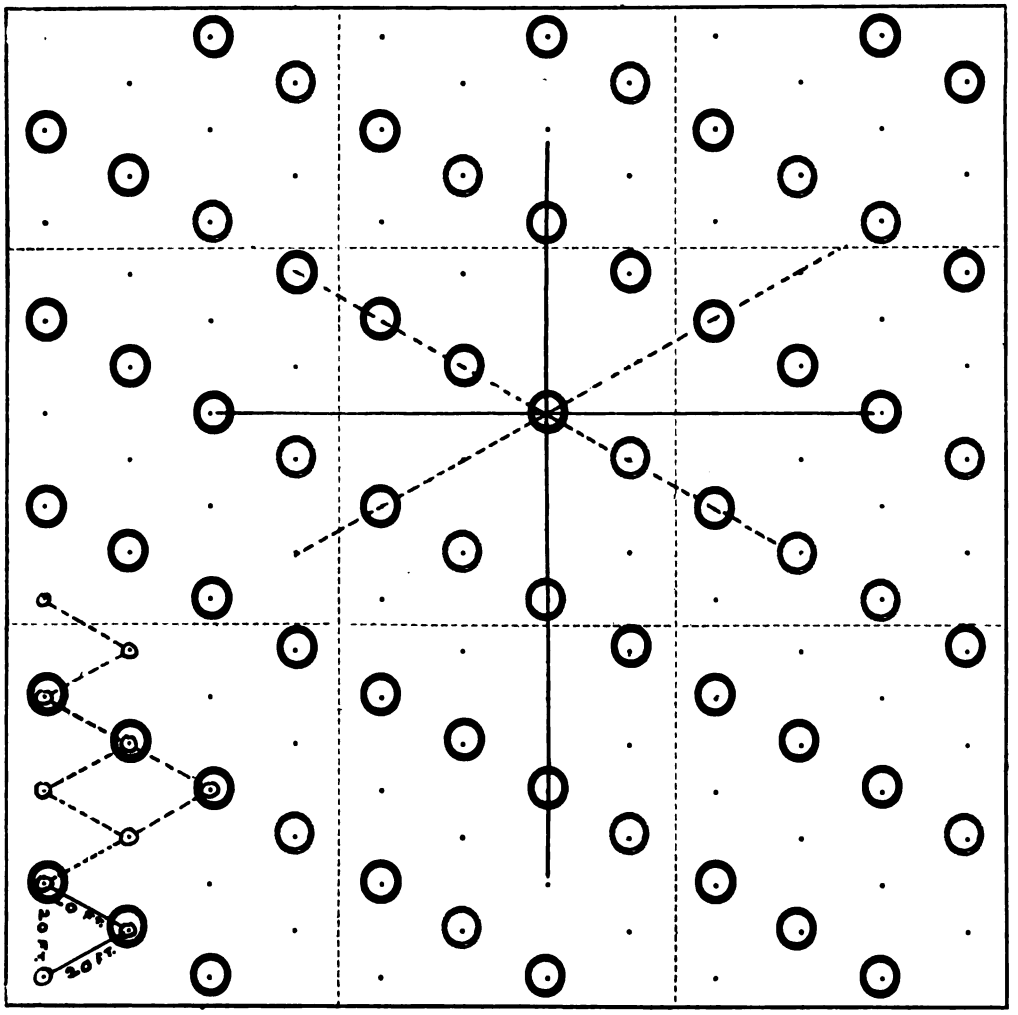


Trees fifteen (15) to eighteen (18) years old. In removing the trees represented by green, we have removed a tree from two sides of every tree that is left.

Each unit now contains six (6) red and six (6) blue. The acre contains ninety-six (96) trees, now is the time to decide which variety you want to have predominate. When thinning this arrangement if you know which variety is the most profitable for you to grow, cut so that you can have an orchard with that variety predominating, or with an equal number of each variety if there is then no difference in their value. You must decide this question *now* as further thinnings are along distinctly different schemes as you will note as you read along. Compare page 7 with page 10.

ORCHARD AFTER SECOND THINNING.

(OPTIONAL THINNING AT SAME PERIOD SHOWN ON PAGE 10)

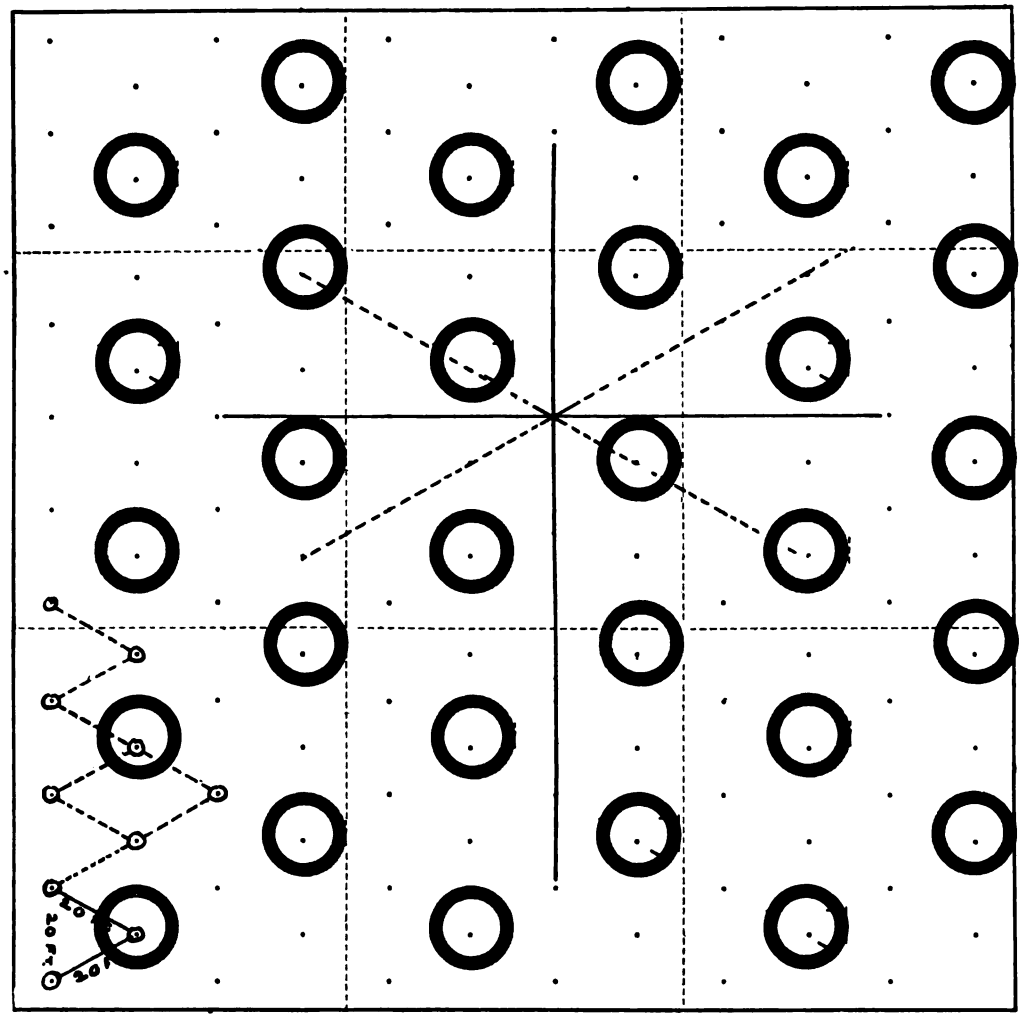


This arrangement may be thinned to half and half, or to three (3) blue to one (1) red as shown on pages 8 and 9.

Each unit contains three (3) red and five (5) blue.

The acre contains sixty-three (63) trees.

MATURE ORCHARD. (THINNED TO AN EQUAL NUMBER OF EACH VARIETY, FOLLOWING THE SECOND THINNING AS SHOWN ON PAGE 7.)

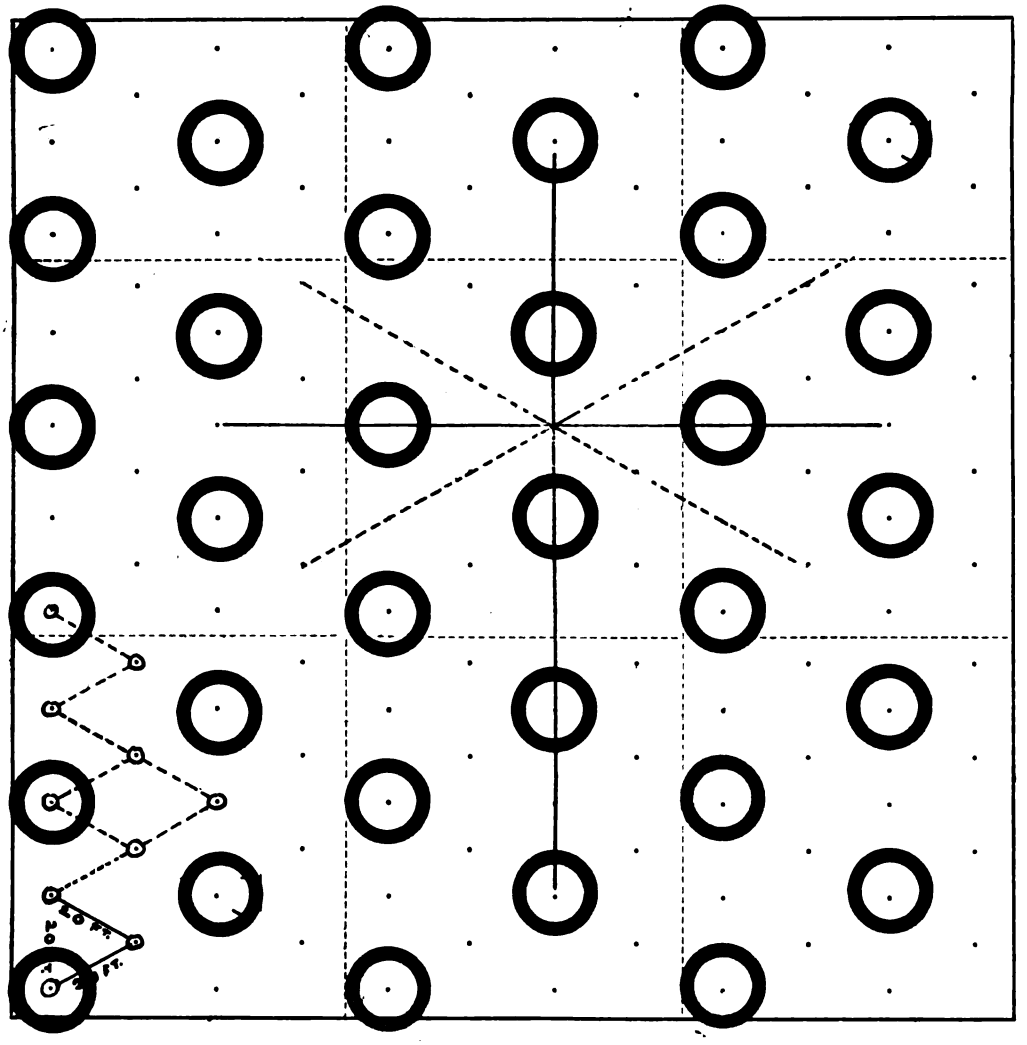


Mature orchard in full bearing. Each tree is forty feet distant from six other trees set on the corners of a hexagon.

Each full unit contains an equal number of trees of each variety that is two (2) blue and two (2) red.

The acre contains thirty (30) trees.

MATURE ORCHARD. (THINNED TO PROPORTION OF 3 TO 1 FOLLOWING THE SECOND THINNING AS SHOWN ON PAGE 10.



Mature orchard in full bearing. Each tree is forty feet distant from six other trees set on the corner of a hexagon.

Each full unit contains three (3) red and one (1) blue.

The acre contains thirty-three (33) trees.